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ABSTRACT

Four groups of gifted, underachieving students in intermediate grades were given different treatments for 6 months during the school year 1961-62. Results were based on 36 students, 10 in the human relations group, 11 in the academic group, 8 in the individually counselled group, and 7 in the control or maturation group. Following the treatment and 1 year after treatment, the students were tested for psychological adjustment and academic achievement. All groups were found to improve academically, but the human relations group and the academic group showed greater gains than the remaining two groups. The human relations group also showed significant gains in psychological adjustment, both personal and social, over the years 1961-63; the academic groups showed a significant gain in personal adjustment only during the treatment period. It was concluded that discussion groups, whether they are oriented toward group member feelings and interpersonal problems or toward academic matters, promote psychological adjustment and academic achievement. (For the initial study, see EC 042 134.) (CB)

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GIFTED UNDERACHIEVERS:
A FOLLOW-UP STUDY OF
FOUR TYPES OF TREATMENT

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EC 042 133E

THE BOARD OF EDUCATION FOR THE CITY OF TORONTO

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GIFTED UNDERACHIEVERS: A FOLLOW-UP STUDY OF FOUR TYPES OF TREATMENT

I - INTRODUCTION

In 1962, the Research Department of the Board of Education for the City of Toronto released a study of the relative effects of four treatments on a sample of "gifted underachievers". In this study, four groups of these students in Toronto elementary schools (grades 4, 5 and 6) received different treatments for a period of approximately six months from Fall, 1961 to Spring, 1962:

Group A: In the "Human Relations Group", group sessions were oriented to the discussion of feelings and interpersonal relations.

Group B: In the "Academic Group", group sessions were oriented to the presentation and discussion of scientific and related topics.

Group C: In the "Individually Counselled Group", each individual had a counsellor appointed in his own school to give him assistance and guidance.

Group D: In the "Control Group", no special experiences were offered and changes were attributed to the effect of maturation.

It was predicted that gifted underachieving children who received any of the three special programmes would show greater gains in psychological adjustment than children not receiving such treatments. Secondly, it was hypothesized that those groups showing a greater gain in adjustment would show a greater gain in academic performance. It was further predicted that the greatest gains would be for the Human Relations Group; the second greatest gains would be for the Academic

Group and/or the Individually Counselled Group, and the Control or Maturation Group would show least gains.

The level of psychological adjustment of the students before and after treatment was tested by the California Test of Personality. The level of academic achievement was tested at the same time by the Metropolitan Achievement Test.

The different treatments had varying effects on measures of the groups' psychological adjustment. The Human Relations Group showed significant gains in both Personal and Social adjustment as measured by the California Test of Personality, whereas the Academic Group showed significant gains only in Personal adjustment. Neither the Individually Counselled Group nor the Control Group showed significant changes in adjustment. In academic achievement, as measured by the Metropolitan Achievement Test, none of the treatment groups showed greater gains than could be attributed to time and a year of schooling.

These results raised two questions about the effects of treatment. Academic improvement was assumed to follow rather than be coincident with improvement in adjustment. It was hypothesized, therefore, that there would be delayed gains in academic achievement following gains in adjustment. The investigators also wished to determine the persistence of the results on the California Test of Personality as this would provide a more complete evaluation of the treatments. For these reasons, the follow-up study was undertaken.

II - METHOD

To examine the persistence of the effects of treatment and the possibility of a delayed effect, the students in the four groups were retested one year after the treatments were terminated. In this follow-up study, the California Test of Personality and the Metropolitan Achievement Test were re-administered in the Spring of 1963. It was possible to obtain scores for all but one of the students previously tested. Teachers' ratings which had been utilized in the original study could not be obtained in 1963.

As the students had been tested three times on both achievement and personality, it was possible to compare their scores using the analysis of variance for repeated measures. Furthermore, to study the different patterns of change accompanying each treatment, rank comparisons were made on the groups. Analysis of variance by rank (Walker and Lev, 1953) was used to examine the relative gains in achievement.

III - RESULTS

The results substantiated the predictions that the effects of treatment would persist in psychological adjustment and that initial gains in adjustment would be followed by gains in achievement.

Psychological Adjustment

The treatments had differing effects on the psychological adjustment of the students. The Human Relations Group had a consistent pattern of gains for all measures of adjustment. The Academic Group showed a slight regression from the gains they made during the treatment period. The Individually Counselled Group showed a consistent pattern of small gains, although it must be noted that, contrary to expectations, at least two of the individually counselled students continued to be seen following termination of the treatment period. The small changes in the Control Group's scores showed no consistent pattern.

Table 1 presents the means for each group before and after the treatment period and for the year following treatment. The F ratios indicate that there was an overall significant improvement in personality adjustment for the Human Relations Group. The Academic Group showed significant improvement in Personal adjustment only during the treatment period. There were no significant changes for the other two groups.

TABLE 1

MEANS AND ANALYSIS OF VARIANCE FOR REPEATED MEASURES OF EACH OF THE TREATMENT GROUPS ON THE CALIFORNIA TEST OF PERSONALITY IN 1961, 1962 AND 1963

Group	N	Type of Adjustment	Means 1961	Means 1962	Means 1963	F Ratio
A Human Relations	10	Personal	39.20	44.40	48.30	10.98**
		Social	37.10	43.40	48.80	8.75**
		Total	39.00	43.90	48.80	8.56**
B Academic	11	Personal	43.91	52.36	51.27	7.19**
		Social	44.36	49.91	47.82	1.34
		Total	44.55	51.00	49.64	3.46
C Individually Counselled	8	Personal	47.75	48.25	53.00	1.66
		Social	48.00	48.75	51.88	0.99
		Total	48.38	49.00	52.38	1.42
D Control	7	Personal	54.14	57.43	55.57	0.45
		Social	52.86	54.71	55.86	0.48
		Total	54.43	56.57	56.43	0.20

** Significant at .01 level.

A comparison of the groups by rank shows that the Human Relations Group made the greatest gains in both areas of psychological adjustment over the two-year period. An examination of the ranks in Total Adjustment further shows that the Human Relations Group made the greatest gain in adjustment during the year following treatment; their treatment had the most persisting effect (see Table 2).

TABLE 2

RANKS OF GAINS BY GROUP ON CALIFORNIA TEST OF PERSONALITY USING STANDARD SCORES

Test	Ranks of Gain by Group							
	1961-1962				1961-1963			
	A	B	C	D	A	B	C	D
Personal Adjustment	2	1	4	3	1	2	3	4
Social Adjustment	1	2	4	3	1	3	2	4
Total Adjustment	2	1	4	3	1	2	3	4

In comparison to the Control Group, the Individually Counselled Group showed a gain in the year following treatment (see Table 2). Although this gain is not significantly large, it suggests that individual counselling had a greater long-term effect on psychological adjustment than maturation part of which could be ascribed to the continued counselling.

Academic Achievement

All groups showed significant academic gains in every subject measured by the Metropolitan Achievement Test (see Table 3). These gains were expected as a function of maturation and experience.

There were differences in the amount gained academically, however, for the four groups in the year following treatment. To examine the pattern of scores for the groups, the means for achievement were ranked. The pattern was found to be similar before and after treatment, and the ranks of the groups were not found to be significantly different. Major changes occurred, however, during the year following treatment. The ranks in 1963 were significantly different, the Human Relations Group showing a considerable gain during that year. The treatment for this group alone led to a persisting overall gain in achievement (see Tables 3 and 4).

TABLE 3

TABLE OF MEANS AND ALALYSIS OF VARIANCE FOR REPEATED MEASURES OF EACH OF THE FOUR TREATMENT GROUPS ON THE METROPOLITAN ACHIEVEMENT TEST IN 1961, 1962 AND 1963

Group	N	MAT Subject	Means 1961	Means 1962	Means 1963	F Ratio
A Human Relations	10	Word Knowledge	53.30	57.10	62.60	19.54**
		Reading	53.00	54.90	63.50	15.57**
		Spelling	52.40	53.80	64.80	47.43**
		Language	42.90	55.30	65.90	21.18**
		Language Study Skills	45.90	52.10	59.40	4.88*
		Arithmetic Computation	35.50	46.10	66.40	34.29**
		Problem Solving	32.40	42.30	59.30	34.30**
B Academic	11	Word Knowledge	53.64	58.82	64.91	14.83**
		Reading	51.82	54.55	60.73	7.52**
		Spelling	53.09	54.18	60.09	4.88*
		Language	44.09	53.64	60.82	13.91**
		Language Study Skills	41.45	51.64	64.64	21.84**
		Arithmetic Computation	35.91	47.91	59.55	46.34**
		Problem Solving	36.73	43.18	62.73	39.76**
C Individually Counselled	8	Word Knowledge	45.88	51.00	56.38	14.97**
		Reading	46.00	53.38	58.25	11.53**
		Spelling	41.88	48.63	51.75	12.24**
		Language	41.25	50.63	59.75	21.61**
		Language Study Skills	40.38	45.38	56.38	14.08**
		Arithmetic Computation	41.00	50.63	55.50	8.23**
		Problem Solving	41.00	49.25	57.13	29.15**
D Control	7	Word Knowledge	50.43	55.71	61.00	8.11**
		Reading	53.29	56.57	61.29	13.76**
		Spelling	48.29	52.57	60.14	13.32**
		Language	45.00	58.14	64.57	14.19**
		Language Study Skills	48.71	56.57	63.57	14.75**
		Arithmetic Computation	42.43	55.43	64.14	33.26**
		Problem Solving	40.86	53.43	63.57	29.34**

* Significant at .05 level.

** Significant at .01 level.

TABLE 4

RANKS BY GROUP ON MEANS OF SUBTEST SCORES ON THE METROPOLITAN ACHIEVEMENT TEST IN 1961, 1962 AND 1963

Subtest	Ranks of Means by Group											
	1961				1962				1963			
	A	B	C	D	A	B	C	D	A	B	C	D
Word Knowledge	2	1	4	3	2	1	4	3	2	1	4	3
Reading	2	3	4	1	2	3	4	1	1	3	4	2
Spelling	2	1	4	3	2	1	4	3	1	3	4	2
Language	3	2	4	1	2	3	4	1	1	3	4	2
Language Study Skills	2	3	4	1	2	3	4	1	3	1	4	2
Arithmetic Computations	4	3	2	1	4	3	2	1	1	3	4	2
Problem Solving	4	3	1	2	4	3	2	1	3	2	4	1
Total of Ranks	19	16	23	12	18	17	24	11	12	16	28	14
	$X^2r = 5.6$ $p > .10$				$X^2r = 7.2$ $p < .10$				$X^2r = 12.7$ $p < .01$			

NOTE: The lower the Rank Total, the better the comparative rank.

A further comparison of the four groups in terms of their pattern of gains in achievement shows that there was no significant change in the pattern of rank during the treatment period, but that a significant change occurred during the year following treatment. The Human Relations Group and, to a lesser degree, the Academic Group made significant gains in rank during this time (see Table 5).

TABLE 5

RANKS OF GAIN BY GROUP ON METROPOLITAN ACHIEVEMENT TEST
FOR 1961-1962 AND 1962-1963

Test	Ranks of Gain by Group							
	1961-1962				1962-1963			
	A	B	C	D	A	B	C	D
Word Knowledge	4	2	3	1	2	1	3	4
Reading	4	3	1	2	1	2	3	4
Spelling	3	4	1	2	1	3	4	2
Language	2	3	4	1	1	3	2	4
Language Study Skills	4	1	3	2	3	1	2	4
Arithmetic Computation	3	2	4	1	1	2	4	3
Problem Solving	2	4	3	1	2	1	4	3
Total Ranks	22	19	19	10	11	13	22	24
	$X^2_r = 6.9$ $p < .10$				$X^2_r = 10.7$ $p < .02$			

IV - DISCUSSION

The results confirm the prediction that the Human Relations Group and the Academic Group would gain in psychological adjustment, but do not show that the group given Individual Counselling gained in adjustment. There are several possible explanations for this lack of gain. Each student in the group had a different counsellor, and the method of counselling to be used was not specified other than that the counsellors were to "take a genuine interest in the child's personal welfare".[1] Each child, therefore, received a different form of counselling.

The second prediction, that those groups which showed gains in adjustment would show gains in academic achievement, was upheld. Moreover, the gain in academic achievement for these groups was a delayed gain, that is, it appeared one year after treatment had ended. The Human Relations Group and the Academic Group showed greater gains relative to the remaining two groups, with the Human Relations Group making the greatest gains in both adjustment and achievement.

The results of this study indicate that the Human Relations Group treatment had a persisting effect on Personal and Social adjustment and also on gain in Academic achievement. The Academic Group treatment also had a persisting effect on Personal adjustment and, to a lesser degree than for the Human Relations Group, a persisting effect on gain in achievement. The other two groups did not show these effects in either adjustment or achievement.

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1 Original study, p. 7.

In evaluating the results of this study, it is necessary to consider the following limitations. Small and unequally matched samples were used in the four groups. Despite ratings on all students before they were assigned to groups, the Control Group showed an initial superiority on tests of adjustment, and a slight initial superiority on some of the achievement tests.

A final precaution must be taken in interpreting the academic gains. There were no significant differences among the gains scored by the students, area by area. It was only through an examination of patterns of gain, by rank analysis, that a significant difference could be observed.

V - SUMMARY AND CONCLUSIONS

Four groups of gifted, underachieving students (grades 4, 5 and 6) were given different treatments for six months during the school year 1961-62. The final results are based on thirty-six students, ten in the Human Relations Group, eleven in the Academic Group, eight in the Individually Counselled Group, and seven in the Control or Maturation Group. Both immediately following, and one year after the treatment had ended, the students were tested for psychological adjustment and academic achievement. As initially predicted, all groups made expected gains in achievement, but the Human Relations Group and the Academic Group showed greater gains than the remaining two groups. The Human Relations Group also showed significant gains in psychological adjustment, both Personal and Social, over the years 1961-63; the Academic Group showed a significant gain in Personal adjustment only during the treatment period.

This study suggests that discussion groups, whether they are oriented toward the group members' feelings and interpersonal problems, as in the Human Relations Group, or toward areas of scientific interest, as in the Academic Group, promote psychological adjustment and academic achievement. Discussions centering on interpersonal relations and on topics of general interest suggested by members of the group led to the greatest improvement. It thus seems that a programme of group-directed discussion would be the most beneficial of the procedures examined in providing special assistance for gifted underachievers.

It should be noted that the effects of such a programme appear to manifest themselves gradually, even a year after treatment. Furthermore, the most apparent gains would be in adjustment; the gains in achievement would be less distinguishable and would occur more slowly. Since this programme was found to have persisting effects over the year following treatment, group-directed discussion promises the most permanent results in adjustment and achievement.

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